The New zEnterprise – A Smarter System For A Smarter Planet

Modern Business Analytics On A Single Platform

Data Plays A Key Role In Smarter Planet Solutions


Smart retail


Smart supply chains


Smart healthcare


Smart food systems


Smart countries

Data

Process Data

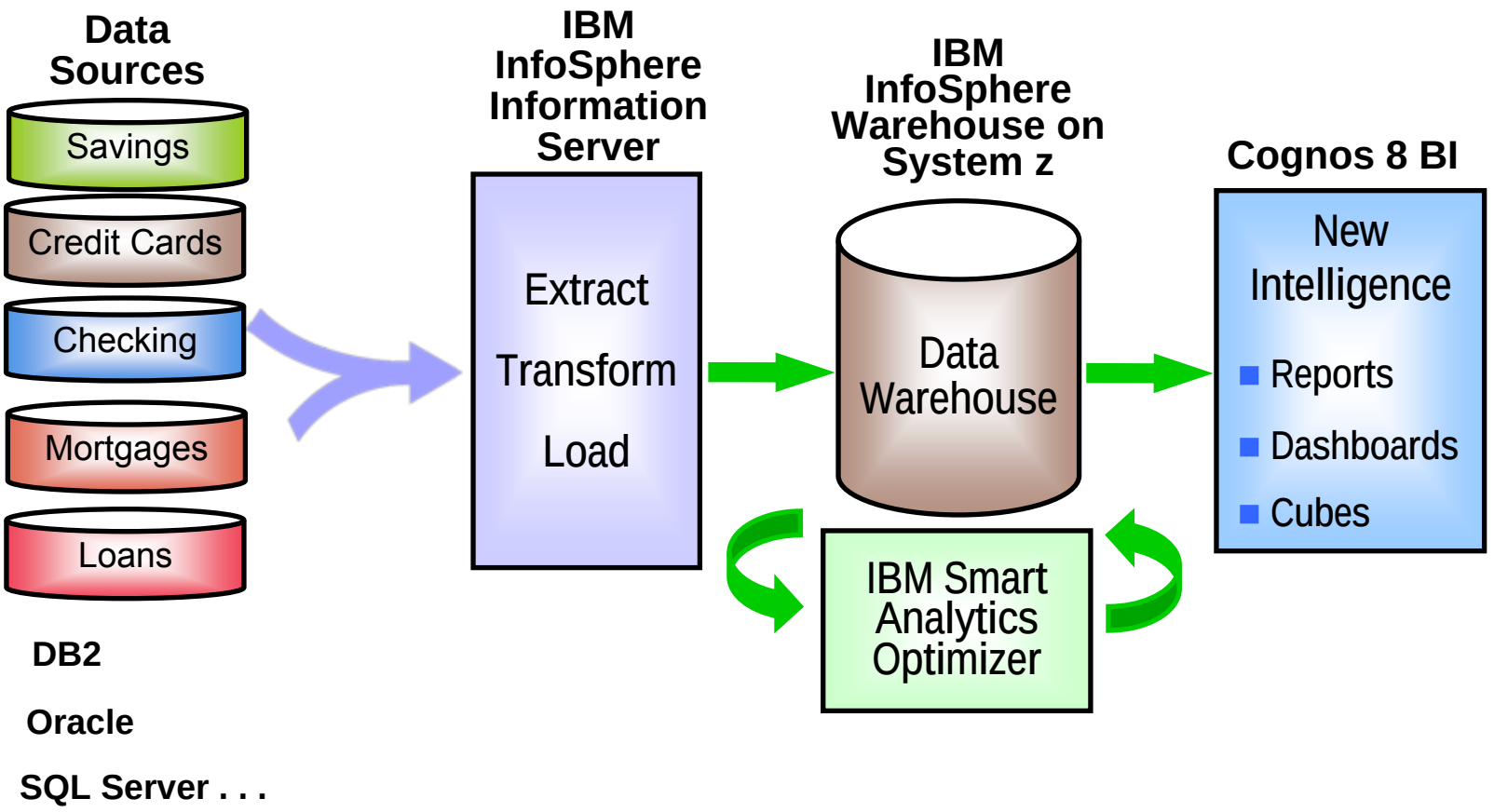
- Process operational data at increasing rates
- Perform sophisticated analysis on massive amounts of historical data in a data warehouse

Captured Data

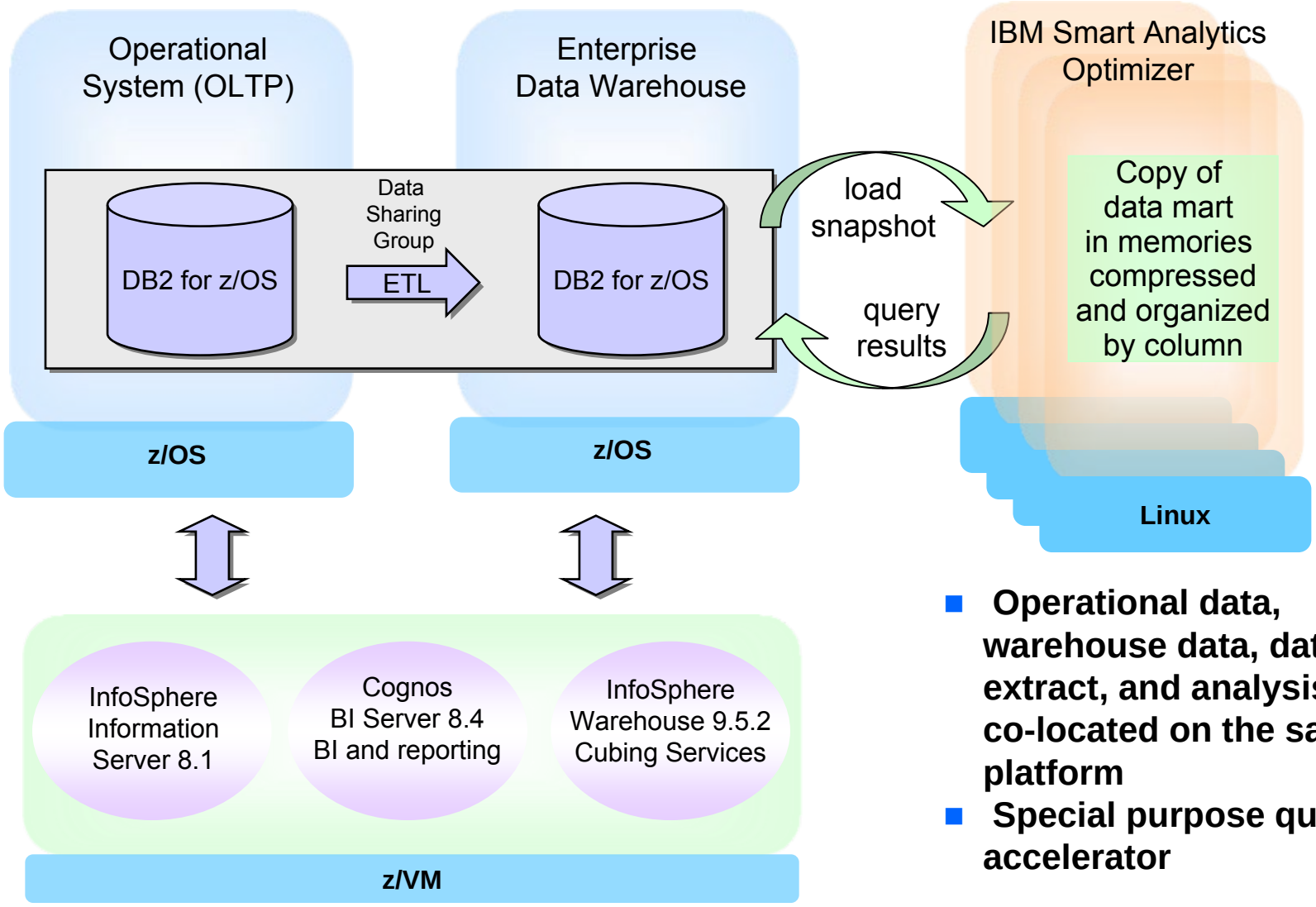
DB2 z/OS

New Intelligence

Load Operational Data From Silos Into A Unified Data Warehouse For New Intelligence



Consolidate Complete Business Intelligence Solution On zEnterprise



- **Operational data, warehouse data, data extract, and analysis all co-located on the same platform**
- **Special purpose query accelerator**

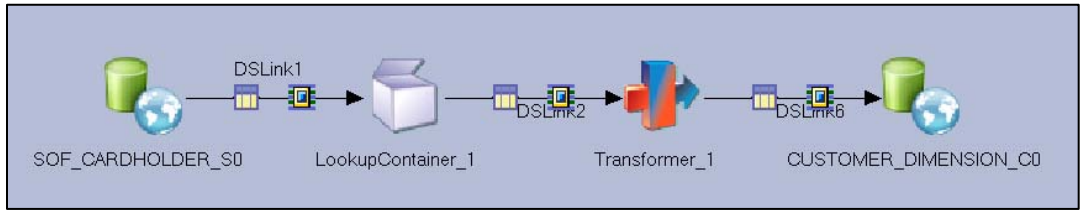
InfoSphere FastTrack Creates Data Maps And Specifications For Your ETL Jobs

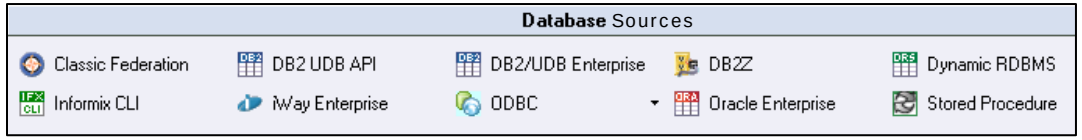
- Create simplified data maps and transformations using drag and drop
  - Automatically discover source and target columns
    - Uses database introspection and Web 2.0-style tagging
    - Use business terms to accurately match source to target
- Data analysts and developers share project specifications
  - Collaboration and reuse improve productivity
  - Use metadata common to all Information Server tools
  - Standard formats and centralized management for governance
    - Synchronize work across global teams
- Generate ETL code directly from job specifications
  - Reduces costs and errors in ETL job development

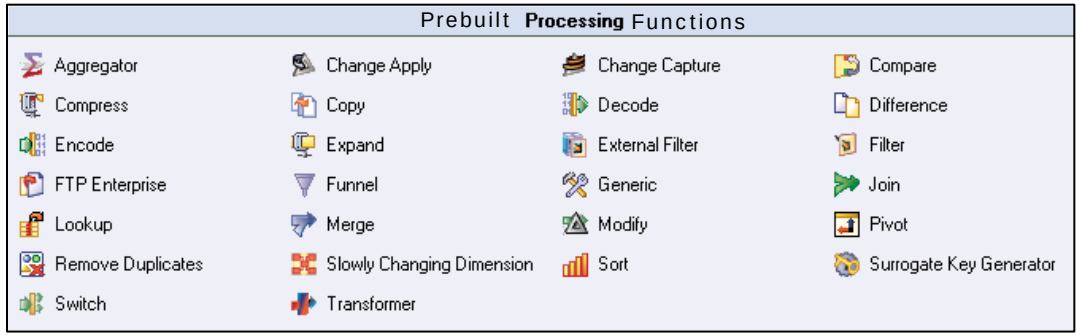
Oracle doesn't offer any of these capabilities

InfoSphere DataStage Implements The ETL Jobs

- Graphical description of ETL jobs using hundreds of pre-built transformation and data quality functions
- Stores and retrieves metadata from Information Server
  - Allows easy reuse of integration work between projects
- Advanced parallel processing capabilities
  - Dynamic partitioning and pipelining
  - Scale jobs across additional hardware without modification

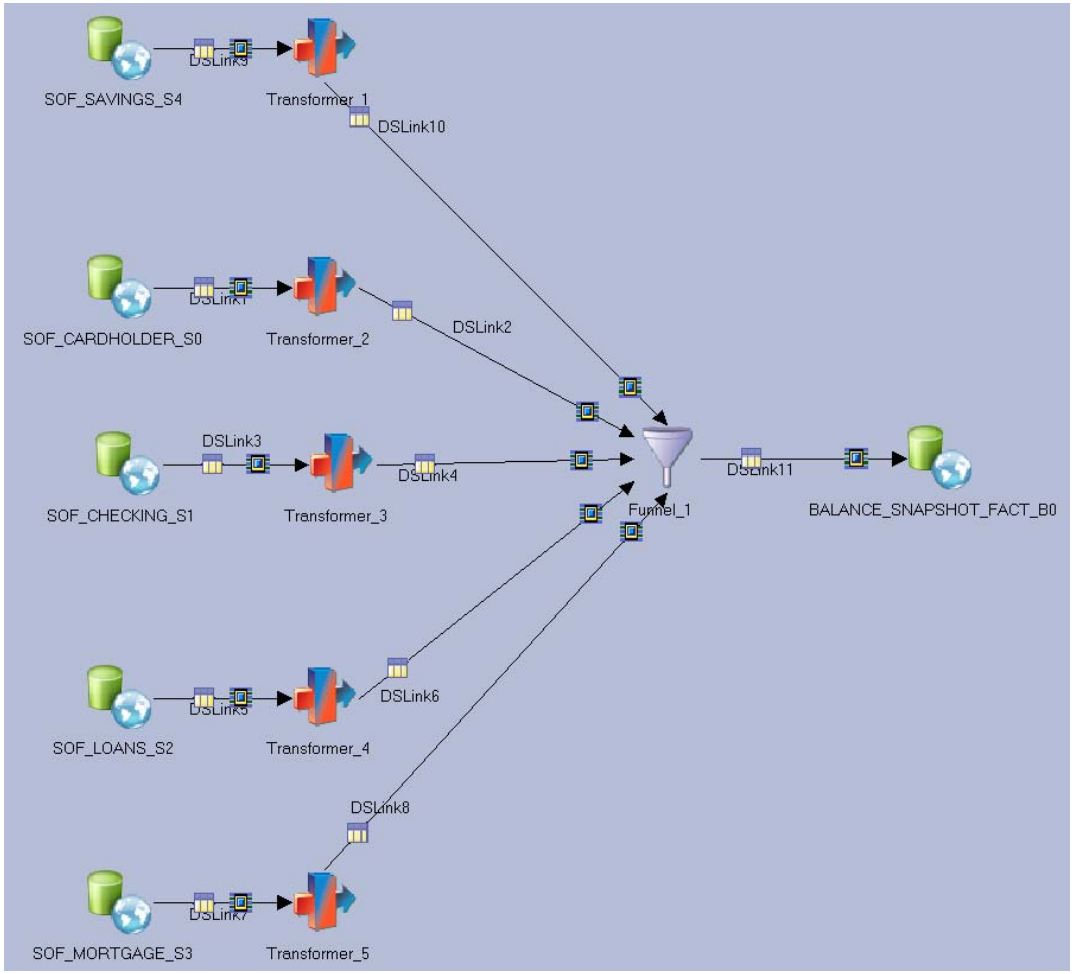






DEMO: Use InfoSphere DataStage To Load The Data Warehouse

1. **Execute and show the results of the ETL job that populates the data warehouse fact table**



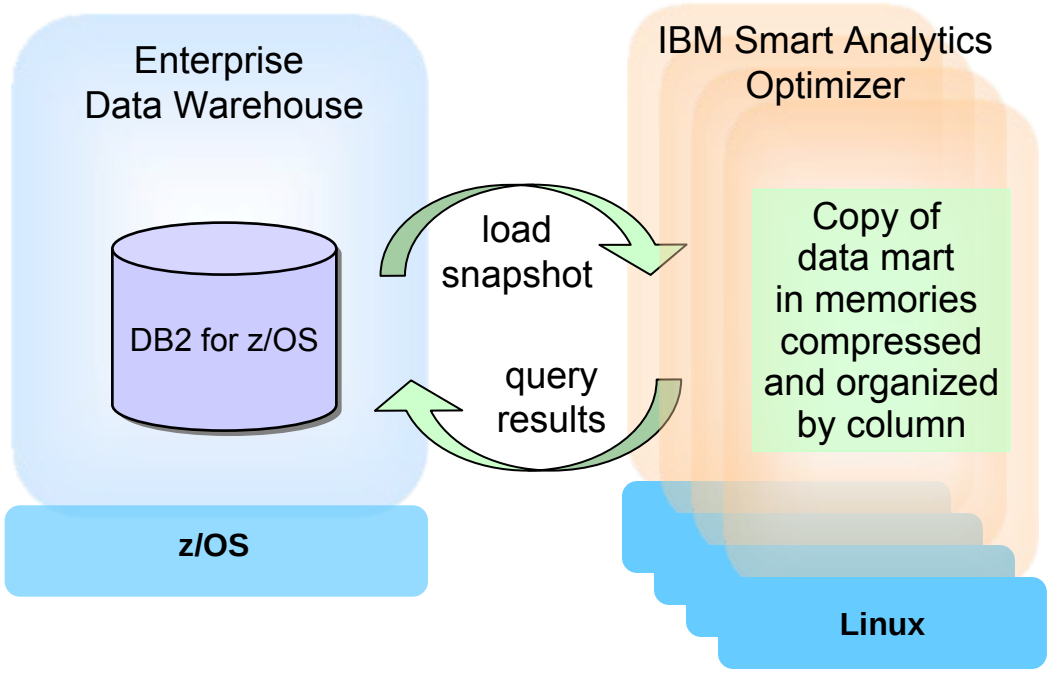
IBM Leads In Data Integration

- Only InfoSphere Information Server delivers unified metadata across all tools for collaboration and reuse
  - Oracle Warehouse Builder and Oracle Data Integrator are two separate products that are not yet unified
- Model-driven design with FastTrack and DataStage speeds development
  - Oracle Warehouse Builder has no tools to help manage source to target mappings
- InfoSphere Information Server works in heterogeneous environments
  - InfoSphere gathers, processes, and cleanses more data from more sources than Oracle

"FastTrack enables our analysts to capture more complete business requirements. The ability to translate this information directly into DataStage jobs with up to 70 percent of the code completed will significantly shorten our development lifecycle."

- Roderich Hofmann, project manager, WAVE, IT-Solutions provider of Bank Austria and member of UniCredit Group

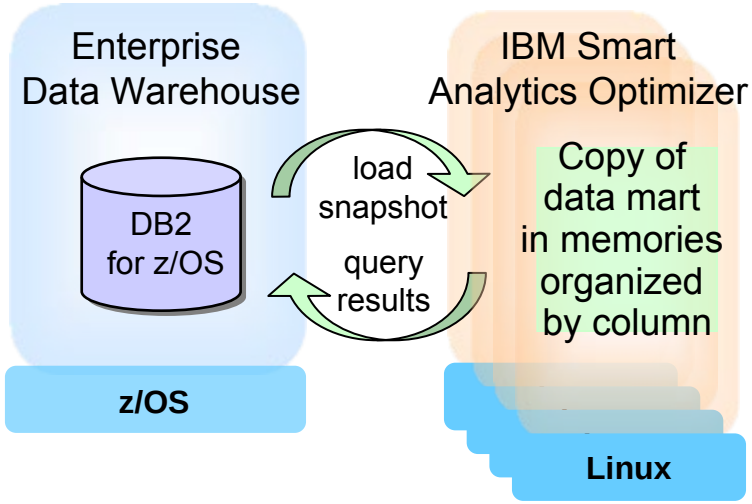
IBM Smart Analytics Optimizer Enables Near Real Time Analytics On zEnterprise



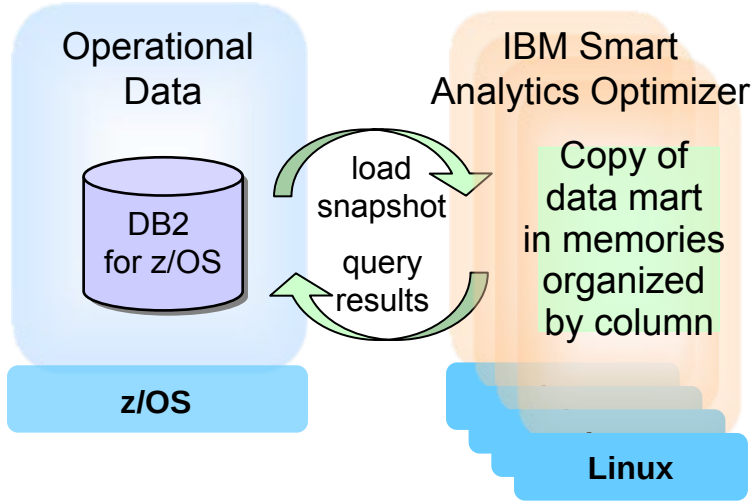
- Leverages blade memory and processors for OLAP-style queries
- Load snapshot then execute queries transparent to applications
- Queries automatically offloaded by DB2 for z/OS Optimizer

Two Usage Scenarios For IBM Smart Analytics Optimizer

- **"Continuous use" scenario**
  - Load data mart once
  - Run continuous jobs until load again
  - Ad hoc queries, variations on reports, different drill downs
  - Metrics: speed of each job, cost per job



- **"Real time analytics" scenario**
  - Load data mart, run one analytical job
  - Repeat load as often as possible (i.e. sample rate)
  - Continuous monitoring of some business process
  - Metrics: Maximum possible sample rate



Execute Query Jobs Faster With IBM Smart Analytics Optimizer

Query Job	Clock Time System z Only (sec)	Clock time with IBM Smart Analytics Optimizer (sec)	Job Execution Speedup Factor	IBM Smart Analytics Optimizer Load Time (sec)
Customer 1 (68 queries)	36,000	300	**120x**	360
Customer 2 (16 queries)	1,200	7	**171x**	216
Customer 3	15,854	5,246	**3x**	7,200

- Cost per job reduced by 1.4 – 1,838 times in continuous use
- Real time analytic sample rates increased to 7 – 387 samples per day

Note: Based on early customer results

Building A Data Warehouse On zEnterprise Costs Less Than Exadata

New Data Warehouse with 6 TB Storage + 1TB IBM Smart Analytics Optimizer

Solution Edition Best Price applied to data warehouse on z/OS

+

Total 3 year cost of acquisition $2.26M

MIPS total	2092
zIIP	1
Memory	32 GB
Storage	DS8000 6 TB

IBM Smart Analytics Optimizer "Small"
1TB acceleration capacity
14 HS22 blades (112 cores)

Or add Oracle Database Machine (Exadata) 1/4 rack with 6 TB SAS, and 1.1 TB SSD storage

Oracle Database Machine ¼ Rack
6 TB SAS (36 HDD drives)
1.1 TB SSD
Two 8-core database servers
Three 8-core storage servers

3 year cost of acquisition $2.50M

List prices for Oracle Database Machine and IBM Smart Analytics Optimizer. Solution Edition prices for System z and DB2 for z/OS

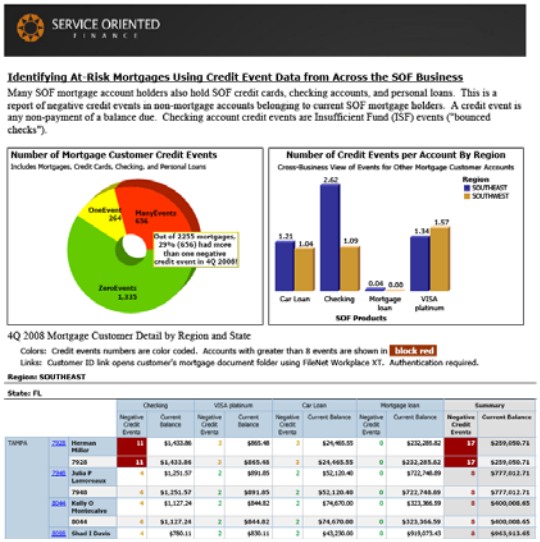
*Exadata performance based on publicly available performance guides

Data Warehouse On System z Trumps Exadata Powered By Inefficient Oracle RAC

- Transactional and warehouse data co-located on z196
  - Exadata requires expensive off-platform ETL
- New analytics query accelerator makes complex queries much faster
- Application and database co-located on z196 sharing resources
  - Exadata over-provisions for peak, growth and through limited choice
- Exploits System z Parallel Sysplex for availability and scale
  - RAC's distributed design difficult to scale, freezes during outages
- System assist processors and I/O sub-system improve scale
  - Exadata I/O handled by x86 processors and architecture
  - Exadata performance falls dramatically as data exceeds cache size
- Hardware-based compression lowers costs of MIPs and storage
  - Oracle's database compression software half as effective
- System z central to disaster recovery and backup strategies
  - Locked-down Exadata does not fit easily into datacenter operations
- Solution Edition pricing, zIIP offloads lower costs
  - System z warehouse costs less than Exadata

DEMO: Use Cognos 8 BI To Identify New Business Insights From The Data Warehouse

1. Show report generated in Cognos Report Studio in PDF format
2. Report identifies high-risk mortgages by looking at negative credit events in other customer accounts (CC, Checking, etc…)
3. Report uses both structured and unstructured data (link to mortgage data stored in FileNet)
4. Use Go! Dashboard to monitor the business operations


SERVICE ORIENTED FINANCE

Identifying At-Risk Mortgages Using Credit Event Data from Across the SOF Business

Many SOF mortgage account holders also hold SOF credit cards, checking accounts, and personal loans. This is a report of negative credit events in non-mortgage accounts belonging to current SOF mortgage holders. A credit event is any non-payment of a balance due. Checking account credit events are Insufficient Fund (ISF) events ("bounced checks").

Number of Mortgage Customer Credit Events

Includes Mortgages, Credit Cards, Checking, and Personal Loans

Number of Credit Events per Account By Region

Cross-Business View of Events for Other Mortgage Customer Accounts

4Q 2008 Mortgage Customer Detail by Region and State

Colors: Credit events numbers are color coded. Accounts with greater than 8 events are shown in block red

Links: Customer ID link opens customer's mortgage document folder using FileNet Workplace XT. Authentication required.

Region: SOUTHEAST

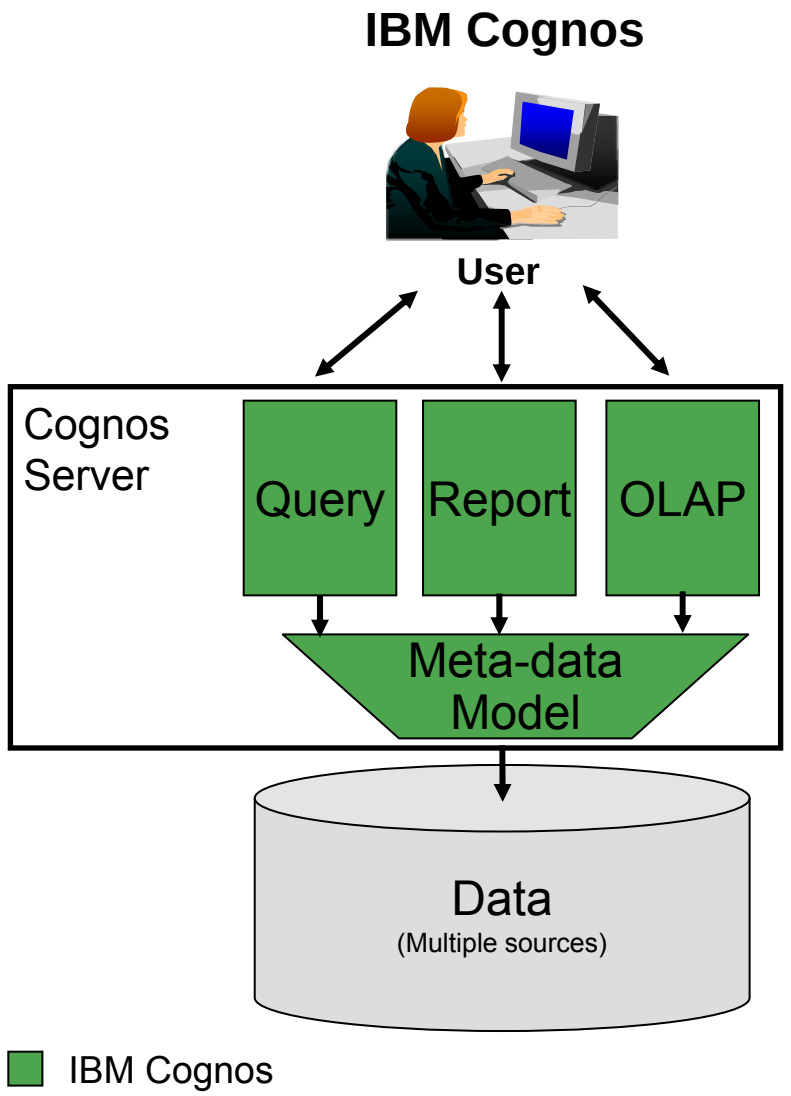
State: FL

			Checking		VISA platinum		Car Loan		Mortgage loan		Summary	
			Negative Credit Events	Current Balance	Negative Credit Events	Current Balance	Negative Credit Events	Current Balance	Negative Credit Events	Current Balance	Negative Credit Events	Current Balance
TAMPA	7928	Herman Miller	11	$1,433.86	3	$865.48	3	$24,465.55	0	$232,285.82	17	$259,050.71
	7928		11	$1,433.86	3	$865.48	3	$24,465.55	0	$232,285.82	17	$259,050.71
	7948	Julia P Lamoreaux	4	$1,251.57	2	$891.85	2	$52,120.40	0	$722,748.89	8	$777,012.71
	7948		4	$1,251.57	2	$891.85	2	$52,120.40	0	$722,748.89	8	$777,012.71
	8044	Kelly O Montecalvo	4	$1,127.24	2	$844.82	2	$74,670.00	0	$323,366.59	8	$400,008.65
	8044		4	$1,127.24	2	$844.82	2	$74,670.00	0	$323,366.59	8	$400,008.65
	8098	Chad I Davis	4	$780.11	2	$830.11	2	$43,230.00	0	$918,073.43	8	$963,913.65

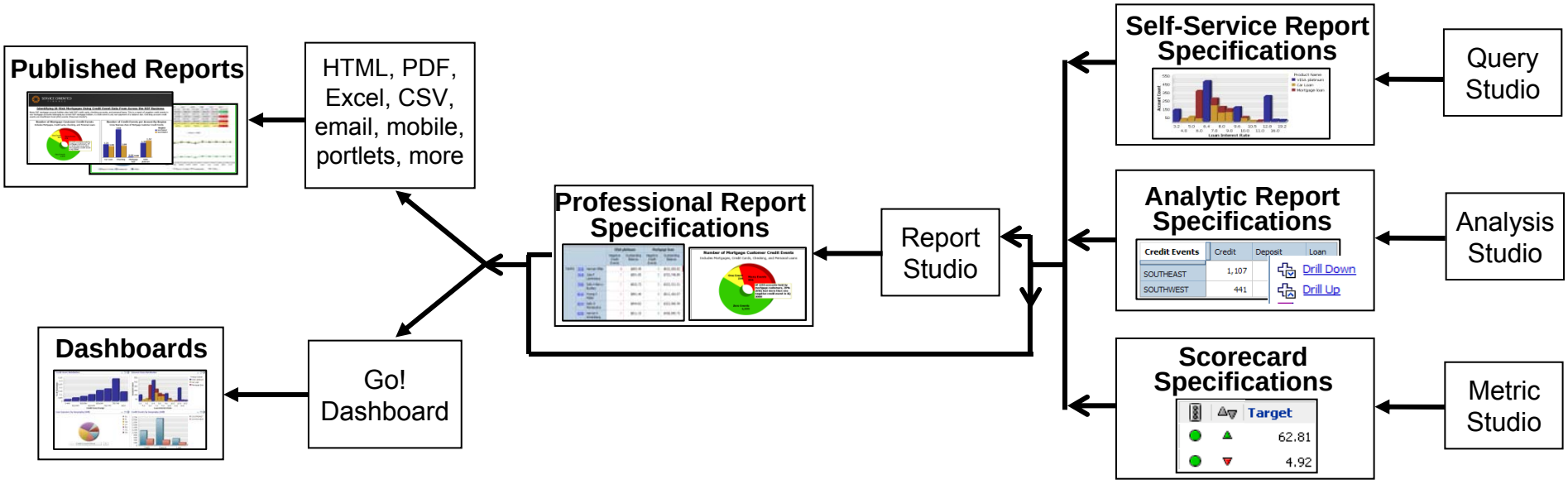
- At risk customers are identified

IBM Cognos Is An Integrated Platform For Smart Analytics

- Implemented in Java, runs on WebSphere
- 100% browser based access
  - Server side business intelligence
  - Users can access new intelligence from anywhere
- Easiest for IT to deploy and manage
  - Scales up and out across heterogeneous hardware and operating systems
  - Unified security
  - Unified administration
- Consistent user interface across tooling
  - Greater user satisfaction and increased business agility with lower IT costs
- Common meta data model
  - Author new intelligence assets once, consume anywhere
  - Common view enables open data strategy
  - Supports Unicode and multilingual features without recreating reports



Reuse Trusted New Intelligence Assets Across The Cognos 8 Platform



- All new intelligence assets share a common metadata model and common report specification
- Author Once – Consume Anywhere
- Ensures consistent information and enables reuse across platform functions

- Oracle has multiple metadata models depending on source type
- Oracle has multiple different report formats
- Oracle cannot reuse assets between tools

IBM Smart Analytics System 9600: Delivers Enterprise-wide Analytics On z196

- **Extend the qualities of service, inherent in the z/OS environment to ensure the availability and security of data.**

- **Hardware/OS**
  - z/OS 1.12
  - IBM zEnterprise technology
  - IBM System Storage DS8700 Intelligent Disk controller
    - Large controller cache and 3 Tier disk offering

- **Unique Software**
  - DB2 for z/OS
  - Cognos 8 BI included in base offering (Linux on System z)
  - InfoSphere Warehouse (Linux on System z)

- **Optional Components**
  - Solid State drives, integrated within DS8700
    - Easy Tier to identify and migrate “hot data” to SSD
  - IBM Smart Analytics Optimizer

zEnterprise Is An Excellent Base For Your Data Warehouse And Business Analytics

- Operational and warehouse data co-located on z196
- Exploits System z Parallel Sysplex for availability and scale
- Cognos supports a common metadata model and report specification and provides 100% browser based access
- Systematic disaster recovery and backup strategies
- Qualities of Service
- Competitive Price